

## 1.

Migration of Nymphalidae (Nymphalinae), Brassolidae, Morphidae, Libytheidae, Satyridae, Riodinidae, Lycaenidae and Hesperidae (Butterflies) Through Portachuelo Pass, Rancho Grande, North-central Venezuela.<sup>1</sup>

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(Plates I & II).

[This is one of a series of papers resulting from the 45th, 46th and 47th Expeditions of the Department of Tropical Research of the New York Zoological Society, made during 1945, 1946 and 1948, under the direction of Dr. William Beebe, with headquarters at Rancho Grande in the National Park of Aragua, Venezuela. The expeditions were made possible through the generous cooperation of the National Government of Venezuela and of the Creole Petroleum Corporation.

[The characteristics of the research area are in brief as follows: Rancho Grande is located in north-central Venezuela (10° 21' N. Lat., 67° 41' W. Long.), 80 kilometers west of Caracas, at an elevation of 1,100 meters in the undisturbed montane rain forest which covers this part of the Caribbean range of the Andes. The migration flyway of Portachuelo Pass, which is also the water-shed between the Caribbean and Lake Valencia, is 200 meters from Rancho Grande. Adjacent ecological zones include seasonal forest, savanna, thorn woodland, cactus scrub, the fresh-water lake of Valencia and various marine littoral zones. The Rancho Grande area is generally subtropical, being uniformly cool and damp throughout the year because of the prevalence of the mountain cloud cap. The dry season extends from January into April. The average humidity during the expeditions, including parts of both wet and dry seasons, was 92.4%; the average temperature during the same period was 18° C.; the average annual rainfall over a five-year period was 174 cm. The flora is marked by an abundance of mosses, ferns and epiphytes of many kinds, as well as a few gigantic trees. For further details see Beebe & Crane, *Zoologica*, Vol. 32, No. 5, 1947. Unless otherwise stated, the specimens discussed in the present paper were taken in the montane cloud forest zone, within a radius of one kilometer of Rancho Grande.

[For an account of Portachuelo Pass, together with a general introduction to the groups of migrating insects and migrating factors, see "Insect Migration at Rancho Grande," by William Beebe, *Zoologica*, 1949, Vol. 34, No. 12, pp. 107-110. Papers dealing with specific groups are as follows; Papilionidae (Vol. 34, No. 14, pp. 119-126); Danaidae, Ithomiidae, Acraeidae and Heliconidae (Vol. 35, No. 3, pp. 57-68); Pieridae (Vol. 35, No. 16, pp. 189-196].

MIGRATION OF NYMPHALIDAE  
(NYMPHALINAE).

The nymphalid migrants of Portachuelo Pass, Venezuela, comprise a varied and colorful group of 55 species. Of three species only two specimens were taken, while in the case of six others, only a single individual was observed or captured. On the other hand, *Eunica monima* and *Marpesia chiron* excelled all other species of Lepidoptera of whatever family in sheer abundance. They thus live up to a similar reputation in many records of migration in literature.

*Euptoieta hegesia hegesia* (Cramer).

*Field Name*: Orange Fritillary.

*Species Range*: Southern United States to Argentina.

*Subspecies Range*: Southern United States to middle South America.

*Field Characters*: This species recalls in general the heliconid *Agraulis vanillae*. Although it has such a continental distribution and is common in many localities, we took but a single migrant.

*Record*: 1945—May 28 (1 taken, 45467).

*Phyciodes carme carme* (Doubl. & Hew.).

*Field Name*: Orange-banded Spotted Nymphalid.

*Species Range*: Colombia and Venezuela.

*Subspecies Range*: Venezuela.

*Field Characters*: Medium, black, with wide orange hindwing band, large forewing spots.

*Number*: Total, 9. Taken, 5.

*Sex*: Both sexes taken.

*Date*: April 27 to July 16.

*Record*: 1945—July 16 (1 taken). 1948—April 27 (1 taken, 48403; 2 seen); May 6 (1, 48494); June 6 (1); July 2 (1 taken, 2 seen).

*Phyciodes clio estebana* Hall.

*Field Name*: Eight-spotted Black-and-white.

*Species Range*: Mexico to Bolivia.

*Subspecies Range*: Venezuela.

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*Field Characters*: Four large white spots on forewing, white band on hindwing.

*Number*: A rare species. Total, 12. Taken, 3.

*Date*: July 3 to 21.

*Record*: 1948—July 3 (1 taken, 4 seen), 10 (1), 21 (1 taken, 481274; 6 seen).

***Phyciodes drusilla drusilla* (Felder).**

*Field Name*: Small Buff-freckled Black.

*Species Range*: Mexico to Bolivia.

*Subspecies Range*: Panama, Colombia and Venezuela.

*Field Characters*: An inconspicuous buff-freckled butterfly. None seen except those which were taken.

*Number*: Taken, 8.

*Sex*: Both sexes taken.

*Date*: April 27 to July 18.

*Record*: 1945—June 2 (1), 13 (1). 1946—April 27 (1). 1948—April 30 (1, 481453); July 3 (1), 15 (2), 18 (1).

***Phyciodes leucodesma* (Felder).**

*Field Name*: One-spotted Black-and-white.

*Species Range*: Nicaragua to Colombia, Venezuela and Trinidad.

*Field Characters*: Easily confused in the field with *Dynamine theseus*.

*Number*: This wide-spread species is common in many places, but only a single migrant was seen or collected.

*Record*: 1948—July 15 (1 taken, 481550).

***Phyciodes Ilriope anieta* (Hew.).**

*Field Name*: Small Orange-buff.

*Species Range*: Mexico to Argentina.

*Subspecies Range*: Guatemala to Bolivia and Venezuela.

*Field Characters*: A small orange-buff insect, with dark border and forewing bar.

*Number*: Total, 172. Taken, 26.

*Sex*: Both sexes taken.

*Date*: March 15 to September 8.

*Record*: 1945—March 23 (1), 28 (1); April 25 (1); June 20 (1); July 15 (4). 1946—September 8 (1, 461170; 82 plus seen). 1948—March 15 (2 taken, 14 resting on leaves), 15 (1, 48325; fresh brood, 20 plus passing or mating); April 27 (2, 48401; 24 seen, 16 mating), 29 (1); May 21 (1), 25 (2, 48589); June 6 (1); July 3 (1), 13 (1), 16 (1), 23 (2). On July 13, 23 and 24 individuals were taken at Km. 15, a short distance south of the pass.

***Chlosyne janals hyperia* (Fabr.).**

*Field Name*: White-dotted Black.

*Species Range*: Texas to Colombia.

*Subspecies Range*: Mexico to Venezuela.

*Field Characters*: Small black nymphalid, with crescent of white dots or spots on forewing. Easily identified on wing.

*Number*: Total, 227. Taken, 1. Curiously limited as to date; abundant on two days, otherwise not observed.

*Date*: July 15 and 26.

*Record*: 1948—July 15 (1, 481547; 16 seen), 26 (210 counted passing through Pass in loose flock, 11 to 11:30 A.M.).

***Chlosyne lacinia saundersii* (Doubl. & Hew.).**

*Field Name*: Small Buff-and-orange-banded Black.

*Species Range*: United States to Bolivia and Venezuela.

*Subspecies Range*: Colombia and Venezuela.

*Field Characters*: Slow flight makes identification easy. Somewhat resembles the narrow-winged *Phyciodes carme*.

*Number*: Total, 328. Taken, 9.

*Date*: March 16 to July 24.

*Record*: 1945—March 16 (1, 45465); July 20 (1, 45466). 1948—June 16 (1 taken, 10 worn ones seen); July 17 to 24 common on migration, about 300 seen), 24 (6 taken, 9 seen).

***Chlosyne narva* (Fabr.).**

*Field Name*: Small Narrow-winged Yellow-spotted Nymphalid.

*Species Range*: Mexico to Peru and Venezuela.

*Field Characters*: The narrow wings, the white distal dots and the proximal yellow area characterize this species and make identification easy.

*Number*: Total, 264. Taken, 34. Two good-sized flocks.

*Date*: April 30 to July 24.

*Record*: 1945—June 12 (1), 20 (1). 1946—June 26 (1). 1948—April 30 (1, 48461; 3 seen); May 9 (2); June 15 (1), 30 (2 taken, 55 seen); July 2 (2), 10 (4 seen), 13 (1 at pass, 1 at Km. 15), 14 (2), 15 (3 at pass, 1 at Km. 15), 16 (1 taken, 79 seen), 17 (1), 23 (3 at pass, 3 at Km. 15), 14 (2 at pass, 61 seen, 3 at Km. 15).

***Vanessa virginiensis brazillensis* (Moore).**

*Field Name*: Dwarf Painted Beauty.

*Species Range*: Widely distributed in North and South America.

*Subspecies Range*: Colombia and Venezuela to Peru and Brazil.

*Field Characters*: Under a new name this is our northern Painted Beauty, *Vanessa hunteri*, slightly smaller and forming the tropical subspecies. It is a close relative of *Vanessa cardui*, one of the most famous of the world's migrants.

*Number*: Total, 70. Taken, 3. Singly, except for one large flock. One taken migrating through the neighboring pass of Choroní.

*Date*: April 5 to June 16.

*Record*: 1945—April 5 (1); June 16 (1 at Choroní). 1948—May 21 (1, 48541; 76 on leaves or fighting against wind).

***Junonia evarete zonalls* Felder.**

*Field Name*: Tropical Buckeye.

*Species Range*: United States to Argentina.

*Subspecies Range*: Mexico to Colombia, Venezuela and Trinidad.

*Field Characters*: In general slightly darker than our familiar northern *Junonia coenia*.

*Number*: Total, 18. Taken, 2.

Date: April 10 to July 17.

Record: 1945—(8 seen). 1948—July 3 (1 taken, 8 seen), 17 (1).

***Hypanartia dlone* (Latr.).**

Field Name: Dark-striped Brown.

Species Range: Guatemala to northern South America and Brazil.

Field Characters: A dull, tailed medium-sized insect, brown with several dark bands extending across all four wings.

Number: Total, 7. Taken, 2.

Record: 1948—July 9 (1 taken, 5 seen, all worn), 24 (1, 481545).

***Hypanartia iethe* (Fabr.).**

Field Name: Black-and-orange Barred.

Species Range: Texas to south Brazil.

Field Characters: Unique in barred black-and-orange forewing, and almost solid orange hindwing.

Number: Total, 6. Taken, 6.

Date: April 7 to July 15.

Record: 1946—April 7 (1); July 8 (1, 461025). 1948—April 29 (1); May 21 (1), 26 (1); July 15 (1, Km. 15).

***Anartia amathea amathea* (Linn.).**

Field Name: Red-banded White-starred Anartia.

Species Range: Central America to Brazil.

Subspecies Range: Colombia, Venezuela, Trinidad and the Guianas.

Field Characters: Broad central red band across both wings; rest white-dotted black.

Number: Total, 119. Taken, 17. Usually singly. Two flocks of 12 and 86 respectively.

Date: May 8 to September 7.

Record: 1945—May 24 (1); July 15 (2). 1946—May 29 (10); July 3 (1, 46725; 12 seen); September 7 (2 taken, 86 seen). 1948—May 8 (1); July 3 (1), 9 (1 taken at pass, 1 at Km. 30, 4 seen), 15 (2), 16 (2), 21 (2).

***Anartia jatrophae jatrophae* (Linn.).**

Field Name: Pearly-white Anartia.

Species Range: West Indies, northern South America to Brazil.

Subspecies Range: Lesser Antilles and South America.

Field Characters: The pearly-white ground color could only be confused with *Ageronia februa*, and that hardly.

Number: Occasionally seen, not counted. Taken, 1.

Date: May 28 to July 3.

Record: 1945—May 28 (1, 45457). Seen in 1948 several times in May, June and July, but none taken.

***Eunica caralis indigophana* Felder.**

Field Name: Medium Brown-black Nymphalid.

Species Range: Colombia, Venezuela and Peru.

Subspecies Range: Venezuela.

Field Characters: Brownish-black, with faintly lighter forewing outer band. May be confused with upper side of *Marpesia core-sis*.

Number: Total, 4. Taken, 1.

Record: 1948—July 18 (1, 481246; 3 seen).

***Eunica monima* (Cramer).**

Field Name: Small Ten-spot Brown.

Species Range: Mexico to Venezuela and Brazil.

Field Characters: Dark brown with five white spots in the anterior half of the forewings.

Number: By far the most numerous migrant passing through Portachuelo Pass. There is no need to reproduce all the records of this small, inconspicuous nymphalid through our days of migration observation in 1945, 1946 and 1948. The days on which none were recorded were the memorable ones. In July and August of the first year, before systematic noting of migrants had begun, I find mention of thousands of the small ten-spot, fluttering through the pass or collecting on the lee side waiting for a strong wind to die down. On August 7 with a sprinkling of other species was a host of the smaller butterflies, crowded together in mid-air, close to earth and as high up as we could see.

As one example of many similar occurrences, on May 4, 1946, I found a dense flock of the ten-spots in full migration. Like minute motes they converged on the Pass and with one sweep of the net I took seven, five of which were tattered and torn, two freshly emerged. We climbed the mound close to the Pass and two of us, facing in opposite directions, at eye level, averaged thirteen hundred butterflies of this species in several counts of four minutes each. At intervals throughout an hour and a half, this insect content remained fairly constant and when we left we knew that at the very least 286,000 ten-spots has passed close to us. An hour later the insects were still going full strength. With 20-power binoculars I followed the swarm a full half mile upwards and at vanishing point they appeared as numerous as close to the ground.

Three weeks later, on May 24, there was a resurgent migration of freshly emerged insects, in numbers far exceeding the earlier flocking. Day after day this continued, passing beyond any definite human calculation, the total attaining astronomical proportions.

In 1948 the ten-spots were to be estimated only in tens of thousands and on only a few days. Usually the daily count varied from 8 or 12 to 800 or 1,000. As a whole it was decidedly less than in the other two years, but taken alone, the numbers were impressive. Days of unusual abundance were May 26 (worn and tattered), June 27 and 28 (freshly emerged for the most part), and July 21.

***Eunica near viola* Bates.**

Field Name: Large White-banded Brown.

Species Range: (*viola*) Central South America.

Field Characters: The white oblique band across the forewing of this brownish-black

insect makes its conspicuous on the wing. It appears to be closest to the female *viola*, but above is indistinguishable from the female *alcmena*.

*Number*: Total, 18. Taken, 2.

*Date*: May 9 to July 14.

*Record*: 1948—May 9 (1 ♀, 48515); July 14 (1 ♀, 481172; 16 seen in close flock).

***Dynamine getae*** (Godman & Salvin).

*Field Name*: Shining-green Ten-spot.

*Species Range*: Venezuela, Peru and Bolivia.

*Field Characters*: The five large white spots on each forewing, and the iridescent green sheen of the hindwing are characters of the male. The female is indistinguishable in life from *Phyciodes elio*.

*Number*: Total, 6. Taken, 3.

*Date*: June 22 to July 21.

*Sex*: Both sexes taken.

*Record*: 1948—June 22 (1♂, 48878); July 10 (1♀), 21 (1♂, 481272; 3 seen).

***Dynamine glauce*** Bates.

*Field Name*: Green-sheen Nymphalid (male).

*Species Range*: Central America to Bolivia and the Amazon.

*Field Characters*: Male is covered with a green sheen with dark border. Female like the same sex in the preceding species.

*Number*: Total, 26. Taken, 4. The one flock of 22 was close at hand, drifting along in a compact group, and two were taken.

*Sex*: Both taken.

*Date*: June 6 to July 20.

*Record*: 1948—June 6 (1♀, 481554), 17 (1♂ and 1♀, 48831; 22 seen); July 20 (1♂, 481553).

***Dynamine mylitta*** (Cramer).

*Field Name*: Black-spot Green-sheen Nymphalid.

*Species Range*: Widely distributed in neotropics.

*Field Characters*: Male, shimmering green with central black spot in forewing, and irregular hindwing border. Female without green, and with seven large forewing spots, and three hindwing bands.

*Number*: Total, 52. Taken, 18.

*Sex*: Both taken.

*Date*: May 7 to July 26.

*Record*: 1945—June 20 (1♂, 45330, Km. 15); 21 (1♂). 1946—May 7 (1♀, 46434; 3 seen), 28 (1♀). 1948—June 6 (1♀, 48740), 7 (3), 9 (1), 21 (1♀, 48879; 6 seen), 22 (1♂, 48880; 17 seen); July 8 (8 seen), 15 (2), 16 (1), 21 (1), 23 (1, Km. 15), 25 (1), 26 (1, 481391).

***Dynamine theseus*** (Felder).

*Field Name*: Broad-bordered White.

*Species Range*: Mexico to Colombia and Venezuela.

*Field Characters*: Large white central area on both wings reduces black to a very wide border, on forewing enclosing two dots and one spot.

*Number*: Total, 5. Taken, 5.

*Date*: May 15 to September 7.

*Record*: 1946—September 7 (1). 1948—May 15 (2); July 15 (1), 16 (1).

***Callicore marchalii*** (Guérin).

*Field Name*: Red-underwing Eighty-nine.

*Species Range*: Colombia and Venezuela.

*Field Characters*: Black with glittering green band on forewing. Forewing below mostly scarlet.

*Number*: Total, 169. Taken, 5.

*Date*: March 22 to September 1.

*Record*: 1946—March 22 (1); May 15 (1), 25 (18 fighting against wind); September 1 (counted 80 out of many more). 1948—July 15 (2, 481552; all worn), 20 (1 taken, 3 seen), 24 (14 at Km. 19, 26 at Km. 20, 12 at Pass), 25 (11 at Pass).

***Callicore metiscus*** Doubl. & Hew.

*Field Name*: Black-underwing Eighty-nine.

*Species Range*: Venezuela.

*Field Characters*: Black above with glittering green forewing band. Forewing below mostly black.

*Number*: Total, 103. Taken, 15.

*Date*: April 30 to July 29.

*Record*: 1945—June 4 (1), 13 (1), 17 (2), 21 (1), 28 (1); July 18 (1). 1946—July 1 (1). 1948—April 30 (12 passed); May 29 (1, 481544); July 16 (1), 20 (1), 21 (2), 23 (1, Km. 15), 25 (1, 481551), 29 (76 seen).

***Perisama humboldtii humboldtii*** (Guérin).

*Field Name*: False Buff-underwing Eighty-nine.

*Species Range*: Colombia, Venezuela, Peru and Ecuador.

*Field Characters*: Green band on both wings; below hindwing buff.

*Number*: Taken, 2.

*Date*: April 27 to June 5.

*Record*: 1948—April 27 (1, 48402, worn); June 5 (1, 48739).

***Perisama xenoclea*** Felder.

*Field Name*: Gray-underwing Eighty-nine.

*Species Range*: Venezuela.

*Field Characters*: Bronze green band on all wings. Hindwing below pale gray.

*Number*: Only one taken.

*Record*: 1948—May 9 (1, 48577).

***Catagrama pitheas*** (Latr.).

*Field Name*: Scarlet-and-black Eighty-nine.

*Species Range*: Panama to Venezuela.

*Field Characters*: The wide, oblique scarlet splashes on the black upperside, and two black ocelli on the pink hindwing underside, are unmistakable characters.

*Number*: Total, 174. Taken, 6. Two flocks of 14 and 154 seen.

*Date*: June 21 to July 30.

*Record*: 1945—June 21 (1); July 3 (2). 1946—July 30 (1, 46870; 154 counted). 1948

—July 13 (1, 481163; 14 seen), 19 (1, 481255; 2 seen south of Pass).

***Hamadryas amphinome amphinome* (Linn.).**

*Field Name:* Red-underwing Blue Ageronia.

*Species Range:* Mexico to Bolivia and Brazil.

*Subspecies Range:* North and middle South America.

*Field Characters:* Blue-freckled Ageronia with red on under hindwings.

*Number:* Total, 52. Taken, 3.

*Date:* June 6 to August 8.

*Record:* 1945—June 22 (1 taken, 6 seen). 1948—June 6 (23 seen, many momentarily resting on tree trunks), 10 (17 seen), 28 (1, 481454); July 8 (3 seen), 22 (1).

***Hamadryas februa februa* (Hübner).**

*Field Name:* White-underwing Gray Ageronia.

*Species Range:* Mexico to south Brazil, also West Indies.

*Subspecies Range:* Panama, Colombia, Venezuela to north Brazil.

*Field Characters:* Freckled gray above. Under hindwings chiefly white.

*Number:* Total, 70. Taken, 13.

*Date:* April 30 to July 21.

*Record:* 1946—May 28 (1), 29 (6 seen); June 19 (1). 1948—April 30 (8 seen); May 6 (1, 48493); June 6 (5); July 5 (1 taken, 15 seen), 6 (22 seen), 13 (1, Km. 15; 1 at Pass), 15 (1, Km. 14), 21 (3 at Pass feeding on rotten mangos).

***Hamadryas fornax fornax* (Hübner).**

*Field Name:* Orange-underwing Gray Ageronia.

*Species Range:* Texas to south Brazil.

*Subspecies Range:* Venezuela to south Brazil.

*Field Characters:* Freckled gray above with white forewing spots.

*Number:* Total, 23. Taken, 4.

*Date:* April 9 to July 5.

*Record:* 1945—April 9 (1); July 3 (1), 4 (1). 1948—May 23 (4 seen); July 3 (1, 481052; 9 seen), 5 (6 seen).

***Didonis biblis biblis* (Fabr.).**

*Field Name:* Red-hind-edge Black.

*Species Range:* Mexico to Paraguay.

*Subspecies Range:* Colombia to central Brazil.

*Field Characters:* Black, with a wide brilliant red edge to the hind wings.

*Number:* Total, 72. Taken, 16.

*Date:* May 28 to July 30.

*Record:* 1946—May 28 (9), 29 (1); July 30 (2, 46870; 54 seen). 1948—June 6 (1, 48742), 17 (1); July 12 (2 seen), 21 (2).

***Cystineura bogotana* Felder.**

*Field Name:* Pale Gold-spotted Nymphalid.

*Species Range:* Colombia and Venezuela.

*Field Characters:* A pale species with gold and white bands and rows of spots.

*Number:* Total, 10. Taken, 6.

*Date:* May 23 to July 15.

*Record:* 1948—May 23 (1, 48577; 4 fluttering past), 26 (1), 29 (1); June 6 (2); July 15 (1, Km. 15).

***Pseudonica flavilla sylvestris* (Bates).**

*Field Name:* Small Black-tipped Orange.

*Species Range:* Central America to Peru and south Brazil.

*Subspecies Range:* Colombia to the Amazon.

*Field Characters:* Solid orange with large forewing tips black.

*Number:* Total, 21. Taken, 4.

*Date:* June 17 to July 26.

*Record:* 1948—June 17 (2, 48830; 17 seen); July 21 (1, 481273), 26 (1).

***Pyrrhogyra edocla edocla* Doubl. & Hew.**

*Field Name:* Two-spotted Green-bar.

*Species Range:* Central America to Peru and Brazil.

*Subspecies Range:* Colombia and Venezuela.

*Field Characters:* Black with two large green spots and a wide long green bar.

*Number:* Only two taken, together.

*Record:* 1948—May 23 (2, 48544, 48546).

***Pyrrhogyra neaerea juani* Staud.**

*Field Name:* Large Split-green-bar.

*Species Range:* Mexico to Paraguay.

*Subspecies Range:* Colombia and Venezuela.

*Field Characters:* Large Black, with broad, slightly interrupted median pale green band.

*Number:* Total, 13. Taken, 13.

*Date:* May 28 to July 15.

*Record:* 1945—July 15 (1). 1946—May 28 (2). 1948—May 28 (1); June 6 (3); July 3 (3), 14 (1, 481510), 15 (3).

***Marpesia chiron chiron* (Fabr.).**

*Field Name:* Pale-banded Longtail.

*Species Range:* Mexico and the Antilles south over tropical South America.

*Subspecies Range:* Tropical South America.

*Field Characters:* Good-sized, with one long and a second short tail. Brown, crossed by several pale bands. Apical spots.

*Number:* Second only to the vast numbers of *Eunica montana*, this is the second most abundant migrant through the pass. Total, tens of thousands. Taken, upwards of one hundred.

Throughout the three years of observation at Portachuelo Pass no week passed without our seeing *Marpesia chiron*. Sometimes for days in succession, they would appear, singly or in small companies, or as on May 6, 1945, or July 18, 1946, or April 14, 1948. From one hundred to many thousands passed through the sixty-foot-wide gap in the mountains. They were inconspicuous in color, but their considerable size and long tails made it easy to identify them as they

fluttered rather slowly past. New broods were apparent now and then, but showed no regularity in time of arrival. Frequently this species was seen in pure culture flocks, set off sharply by themselves. When mingled with others it was almost invariably with the still more numerous *Eunica monima*. We traced both of these abundant species several kilometers north and south of the Pass but could never discover their more ultimate origins or destinations.

***Marpesia coresia* (Godart).**

*Field Name:* White-and-brown Underwing.

*Species Range:* Texas south to Peru and Brazil.

*Field Characters:* Upperside dull black with indistinct paler border. Below sharply divided into proximal half white, distal half brown. Easily distinguished in flight, but not when wings are held flat in repose.

*Number:* Total, 435. Taken, 7.

*Date:* May 1 to September 5.

*Record:* 1946—September 5 (1 taken, 127 counted high and fast). 1948—May 1 (1, 48473); June 22 (1); July 3 (1 taken, 3 seen), 5 (1, Km. 18), 10 (1 taken, Km. 31, 2 at pass, 300 seen).

***Marpesia marcella* (Felder).**

*Field Name:* Violet-and-orange Longtail.

*Species Range:* Central and northern South America.

*Field Characters:* Large longtail, anteriorly chiefly orange, male hindwing violet, female brown.

*Number:* Total, 264. Taken, 10. One large flock of 225.

*Sex:* Both taken.

*Date:* April 29 to September 7.

*Record:* 1946—July 8 (1, 46753; 29 seen); September 7 (1, 461149; 225 plus seen). 1948—April 24 (1♂, 48379), 29 (1♀, 481455); May 1 (2), 23 (1); June 6 (1♀).

***Marpesia peleus* (Sulzer).**

*Field Name:* Black-striped Orange Longtail.

*Species Range:* Mexico to Brazil.

*Field Characters:* Large orange longtail, crossed by black bands.

*Number:* Total, 16. Taken, 4.

*Record:* 1946—July 8 (2 taken, 12 passed in small flock). 1948—June 6 (1, 48741); July 23 (1).

***Victorina epaphus* (Latr.).**

*Field Name:* Large White-striped Orange-and-black.

*Species Range:* Mexico to Peru and Brazil.

*Field Characters:* Forewing distally orange, proximally black, separated by a white bar. Hindwing black with the white bar continued across. Very easy to detect in life.

*Number:* One of the most abundant migrants. Total counted, 426, plus hundreds uncounted. Taken, 33.

*Date:* April 29 to July 26.

*Record:* 1945—June 21 (1); July 16 (8 seen). 1948—April 29 (3, 48446; 2 seen); May 21 (2 taken, 8 seen); June 28 (1 taken, 28 high), 29 (18 seen), 30 (6 high); July 3 (2, 481030; 5 at Km. 27, 6 seen), 4 (3 at pass, 2 at Km. 18, 32 seen), 5 (13 seen), 6 (1 taken, 22 seen), 14 (6 seen), 15 (2 taken, 23 seen), 16 (3 taken, 42 seen), 17 (76 seen), 20 (2), 21 (2 taken, 45 seen, 24 (1 taken at pass, 6 seen at Km. 19), 26 (18 seen).

***Victorina stelenes stelenes* (Linn.).**

*Field Name:* Green-spotted Leaf Nymphalid.

*Species Range:* Texas to Bolivia and south Brazil.

*Subspecies Range:* Northern South America to Ecuador, Guianas and Brazil.

*Field Characters:* Black, coarsely banded and spotted with pale green. Can be confused with the narrow-winged heliconid *Philastria dido*.

*Number:* Total, 1,092. Taken, 19.

*Date:* March 15 to September 8.

*Record:* 1946—May 27 (13 seen), 28 (3 seen); July 23 (7, 46842), 28 (83 seen), 29 (16 seen); September 7 (large flock, about 600), 8 (250 plus, fast and erratic). 1948—March 15 (16 seen); April 1 (4 seen), 29 (2, 48444; 2 seen); May 4 (64 drifting slowly, some alighting), 23 (1, 48572), 24 (2, 48574; 8 seen); July 3 (1 taken, 12 seen), 4 (1), 13 (1 taken, 12 high), 19 (2 at Pass, 2 at Km. 15).

***Adelpha boeotia boeotia* (Felder).**

*Field Name:* Small Orange - and - white - striped Brown.

*Species Range:* Central America to Bolivia and Brazil.

*Subspecies Range:* Colombia and Venezuela.

*Field Characters:* Small brown with mid-stripe, orange on forewings and white on hindwings.

*Number:* A single specimen taken.

*Record:* 1948—April 29 (1, 481451).

***Adelpha celerio celerio* (Butler).**

*Field Name:* Red-spotted Blue-stripe.

*Species Range:* Mexico to Peru, Bolivia and Venezuela.

*Subspecies Range:* Guatemala to Colombia and Venezuela.

*Field Characters:* Dark brown with pale mid-stripe, breaking up on forewing into two pale spots and a large red spot.

*Number:* Only a single specimen taken.

*Record:* 1948—June 6 (1, 48748).

***Adelpha irmina irmina* (Doubl.).**

*Field Name:* Buff-barred Brown.

*Species Range:* Peru, Bolivia and Venezuela.

*Subspecies Range:* Venezuela.

*Field Characters:* Dark brown with broad, oblique, buff band across mid-forewings.

*Number:* Total, 81. Taken, 10.

*Date:* February 27 to July 17.

*Record:* 1946—February 27 (1, 46106);

April 27 (1); June 13 (47 passed, fast erratic flight). 1948—April 28 (1, 48427; 3 seen); May 24 (1), 26 (2); July 10 (1 taken, 3 seen), 11 (1 taken, 8 seen), 12 (1, 481144), 17 (1, 481247).

***Adelpha lara lara* Hew.**

*Field Name:* Scarlet-banded Black.

*Species Range:* Colombia, Venezuela and Bolivia.

*Subspecies Range:* Venezuela.

*Field Characters:* Black, with broad scarlet band obliquely across forewings, hence a close mimic of the narrower-winged *Heliconius melpomene*. Beneath, the venation is marked with black.

*Number:* Total, 20. Taken, 4.

*Date:* April 30 to July 3.

*Record:* 1948—April 30 (2, 48460; 12 seen); June 28 (1 taken, associated with 3 *melpomene* models); July 3 (1, 481025; 4 seen).

***Adelpha olynthia inachia* Fruh.**

*Field Name:* Small Brown Nymphalid.

*Species Range:* Colombia and Venezuela to Ecuador and Peru.

*Subspecies Range:* Venezuela.

*Field Characters:* The dullest of nymphalid migrants; bronze-brown above and lighter brown below.

*Number:* Total, 13. Taken, 7.

*Date:* April 29 to July 15.

*Record:* 1945—July (1). 1948—April 29 (2, 481449); May 9 (2); June 6 (1); July 14 (1, 481511; 6 seen).

***Chlorippe cyane cyane* (Latr.).**

*Field Name:* Small Green - hindwing Brown.

*Species Range:* Colombia to Peru.

*Subspecies Range:* Colombia and Venezuela.

*Field Characters:* Black, with the whole center of the hindwing iridescent green. In general appearance a dwarf *Prepona chromus*.

*Number:* Two only taken.

*Record:* 1948—April 24 (1); July 18 (1).

***Historis acheronta acheronta* (Fabr.).**

*Field Name:* Large, 12-dotted Orange-flash Black.

*Species Range:* Mexico and West Indies to south Brazil.

*Subspecies Range:* Tropical South America.

*Field Characters:* Forewing black with six white dots, and proximal shades of orange. Hindwing dark brownish.

*Number:* Total, 55. Taken, 3.

*Date:* May 30 to August 8.

*Record:* 1946—May 30 (1 taken, 24 seen). 1948—July 8 (1, 481117), 14 (29 passing and resting); August 8 (1).

***Smyrna blomfieldia blomfieldia* (Fabr.).**

*Field Name:* Large, 6-dotted Gold-and-black Nymphalid.

*Species Range:* Widely distributed in American tropics.

*Subspecies Range:* Tropical South America.

*Field Characters:* Rich golden-orange, except for black distal half of forewings, enclosing 3 white dots.

*Number:* Total, 46. Taken, 5.

*Date:* May 18 to July 27.

*Record:* 1948—May 18 (1 taken, 27 seen); July 13 (2 taken, 5 seen), 16 (1, 481206; 1 seen), 27 (1, 481400; 8 seen).

***Prepona antimache andicola* (Fruh.).**

*Field Name:* Large Blue-barred Prepona.

*Species Range:* Central America to Peru and the Amazons.

*Subspecies Range:* Venezuela, to Ecuador and Peru.

*Field Characters:* Large, black, with a wide, central, iridescent blue band across all four wings.

*Number:* One specimen taken. Uncertain whether at the Pass or a short distance to the south.

*Record:* 1946—August 7 (1).

***Prepona chromus chillarches* Fruh.**

*Field Name:* Large Green - hindwing Brown.

*Species Range:* Colombia, Venezuela, Ecuador and Peru.

*Subspecies Range:* Venezuela.

*Field Characters:* Blackish-brown with large iridescent green spot in central hindwing.

*Number:* Total, 13. Taken, 4.

*Date:* May 4 to July 11.

*Record:* 1945—May 4 (1 taken, 2 seen); July 3 (1). 1948—May 5 (1 taken, 1 seen); July 11 (1 taken, 6 seen).

***Prepona demophon centralis* Fruh.**

*Field Name:* Large Green-bar Black.

*Species Range:* Mexico to Guianas, Brazil and Paraguay.

*Subspecies Range:* Honduras to Venezuela.

*Field Characters:* Black, with wide iridescent green bar across center of all wings.

*Number:* Total, 82. Taken, 5.

*Date:* April 29 to July 28.

*Record:* 1945—July 6 (1 taken, 3 seen at rotten mangos, 6 migrating). 1946—May 28 (3 migrants), 29 (1 taken, 3 seen), 30 (8 seen); July 28 (1 taken, 46 seen). 1948—April 29 (1, 48447; 6 seen); May 15 (1 taken, 2 seen).

***Anaea pseudiphis* Staud.**

*Field Name:* Blue-spotted Nymphalid.

*Species Range:* Colombia and Venezuela.

*Field Characters:* Black, shot basally with iridescent blue, and with forewings spotted with shining blue.

*Number:* Total, 24. Taken, 2.

*Date:* April 23 to June 4.

*Record:* 1948—April 23 (1 taken, 12 seen, all new and fresh); May 9 (3 seen); June 4 (1 taken, 7 seen).

**Anaea xenocles** (Westw.).

*Field Name:* Large Black-framed Green Nymphalid.

*Species Range:* Mexico to Argentina.

*Field Characters:* Wings black with basal half of all glowing green.

*Number:* Only two taken.

*Record:* 1948—May 24 (1, 48586); July 23 (1, 481549).

**Protogonius hippona trinitatis** Rober.

*Field Name:* Large Ithomiid-mimicking Nymphalid.

*Species Range:* Mexico to Peru and Brazil.

*Subspecies Range:* Venezuela and Trinidad.

*Field Characters:* Indistinguishable on the wing from the ithomiid *Olyris crathis*. Well developed tails.

*Number:* Total, 30. Taken, 3.

*Record:* 1946—September 8 (3, 461171; 27 seen, passing slowly. The three captured from center of flock).

## MIGRATION OF BRASSOLIDAE AND MORPHIDAE.

These two families number, between them, only five species of migrants going south through Portachuelo Pass. They are the largest and among the most brilliant of all butterflies. As migrants, however, they are almost the rarest and the most casual. They were more common flying along the Rancho Grande road and the surrounding jungle trails than through the Pass itself.

## BRASSOLIDAE.

**Caligo atreus ajax** (Linn.).

*Field Name:* White-and-gold-banded Caligo.

*Species Range:* Southern Mexico to Venezuela and Peru.

*Subspecies Range:* Venezuela.

*Field Characters:* Sub-terminal creamy white band along all four underwings. Above white band on fore, gold on hindwings.

*Record:* 2 migrants taken, five others flying and taken along trails in jungle. 1946—April 13 (1), 19 (1).

**Caligo eurilochus caesia** Stichel.

*Field Name:* Violet-winged Owl Butterfly.

*Species Range:* Honduras to Bolivia and south Brazil.

*Subspecies Range:* Venezuela.

*Field Characters:* The largest migrant, spreading more than six inches. Dark brown above, shot with a violet sheen.

*Number:* A rare migrant. Total, 16. Taken, 4. More seen in jungle trails and along road than passing south through Pass.

*Record:* 1945—May 16 (1). 1948—July 15 (1, 481498), 21 (1, 481335), 29 (1, 481435; 3 seen).

**Caligo teucer teucer** (Linn.).

*Field Name:* Black-and-gold Owl Butterfly.

*Species Range:* Central America to northern Brazil and western Peru.

*Subspecies Range:* Guianas, northern Brazil and Peru.

*Field Characters:* Forewing chiefly golden-buff, rest of all wings blackish.

*Number:* A single specimen taken.

*Record:* 1946—July 20 (1).

**Opsiphanes cassina merlanae** Stichel.

*Field Name:* Orange-banded Brassolid.

*Species Range:* Mexico to south Brazil and Bolivia.

*Subspecies Range:* Northern South America.

*Field Characters:* Brown above, with a wide, encircling orange band on all four wings.

*Number:* Two seen and taken.

*Record:* 1945—July 15 (1). 1948—July 18 (1, 481247).

## MORPHIDAE.

**Morpho peleides corydon** Guénéé.

*Field Name:* Blue Morpho.

*Species Range:* Mexico to Ecuador and south Brazil.

*Subspecies Range:* Venezuela.

*Field Characters:* The familiar iridescent blue bird-wing Morpho.

*Number:* An uncommon and casual migrant. A few seen and taken in Pass. Others along road and on jungle trails.

*Record:* 1945—April 18 (1). Two others on later dates. 1948—Six were seen and several taken at various times.

## MIGRATION OF LIBYTHEIDAE.

In spite of a reputation elsewhere for migration, this small family of the Snout Butterflies is represented in the Portachuelo Pass migrants by only eight specimens of a single species.

**Libytheana carimenta carimenta** Cramer.

*Field Name:* Orange-and-white-spotted Snout Butterfly.

*Species Range:* Southern United States to south Brazil.

*Subspecies Range:* Tropical South America.

*Field Characters:* Small brown, six apical, white, forewing spots; three large orange spots elsewhere.

*Number:* Total seen and taken, 8.

*Record:* 1948—June 6 (4, 48732); July 12 (1, 481165), 15 (1), 17 (1), 23 (1).

## SATYRIDAE.

Hundreds of satyrids were seen passing from north to south through Portachuelo Pass. The few captured resolved into 14 species. All but two of these were indistinguishable on the wing, and even in the hand it was not easy in the field to separate them. The two which exhibit distinguishing white markings are *Oressionoma typhla* and *Euptychia hesione*. The other 12 are of varying shades of brown, differing somewhat in size and by the absence or the inconspicuous presence of small ocelli. More than in any



other family the majority of these satyrids were worn, rubbed and torn. Among these are the most abundant, resident, trail butterflies.

I have dispensed with field names and characters.

**Taygetis andromeda**, form **andromeda** (Cramer).

*Species Range*: Mexico to Paraguay.

*Number*: Taken, 6.

*Record*: 1945—March 6 (1), 24 (1); July 11 (1). 1948—March 1 (1, 48309); May 8 (2, 48507).

**Euptychia calixta** Butler.

*Species Range*: Colombia.

*Number*: Taken, 1.

*Record*: 1948—June 6 (1).

**Euptychia hermes fallax** (Felder).

*Species Range*: New Jersey to south Brazil.

*Subspecies Range*: Venezuela to northern Brazil.

*Number*: Taken, 25.

*Record*: 1945—March 31 (1); April 11 (3), 19 (4), 26 (2), 28 (3). May 4 (1); August 9 (1). 1948—April 27 (1, 48400); May 18 (1), 25 (1); June 21 (1), 30 (1); July 2 (2), 15 (1), 17 (1), 20 (1).

**Euptychia hesione**, form **hesione** Sulzer.

*Species Range*: Mexico to south Brazil.

*Number*: Taken, 5.

*Record*: 1948—July 10 (1), 15 (2), 21 (1), 23 (1).

**Euptychia innocentia** (Felder).

*Species Range*: Venezuela.

*Number*: Taken, 1.

*Record*: 1948—July 14 (1, 481164).

**Euptychia iabe**, form **confusa** Staud.

*Species Range*: Mexico to Ecuador.

*Number*: Taken, 1.

*Record*: 1948—May 24 (1).

**Euptychia** near **necys** Godart.

*Species Range*: Colombia, Ecuador, Bolivia and Brazil.

*Number*: Taken, 2.

*Record*: 1945—April 23 (1); May 20 (1).

**Euptychia phares** (Godart), form **phares** (Godart).

*Species Range*: Venezuela to Argentina.

*Number*: Taken, 1.

*Record*: 1948—July 15 (1).

**Euptychia renata peloria** (Felder).

*Species Range*: Central America, Colombia, Venezuela, Guianas and Brazil.

*Number*: Taken, 2.

*Record*: 1945—April 26 (1), 28 (1).

**Euptychia saturnis** Butler.

*Species Range*: Widely distributed in South America.

*Number*: Taken, 4.

*Record*: 1945—April 8 (2), 22 (1), 26 (1).

**Euptychia terrestris** Butler.

*Species Range*: Amazons and Surinam.

*Number*: Taken, 1.

*Record*: 1948—June 7 (1).

**Oressinome typhia typhia** Westw. & Hew.

*Species Range*: Costa Rica south to Colombia, Venezuela, Ecuador, Peru and Bolivia.

*Subspecies Range*: Same except Bolivia.

*Number*: Taken, 17.

*Record*: 1945—March 25 (1), 31 (1); April 11 (1), 18 (1), 22 (2), 26 (1), 28 (1); May 4 (1); June 3 (1). 1946—August 8 (1). 1948—June 7 (1); July 5 (1, 481031), 15 (3), 26 (1).

**Pedaliodes japhieta** (Butler).

*Species Range*: Venezuela.

*Number*: Taken, 1.

*Record*: 1946—April 29 (1).

**Pedaliodes pisonia manis** (Felder).

*Species Range*: Central America, Colombia, Venezuela, Peru, Ecuador and Bolivia.

*Subspecies Range*: Venezuela, Peru and Bolivia.

*Number*: Taken, 3.

*Record*: 1948—15 (1), 18 (1), 26 (1).

MIGRATION OF RIODINIDAE.

Twelve species of riodinids were recorded among the hosts of butterfly migrants through Portachuelo Pass. None were abundant although of *Hades noctula* 376 individuals were observed. Four species were represented by a single specimen each, and two others by two individuals. All the species were of small size and a majority were brilliant in pattern and coloring.

**Euselasia russata** (Godman & Salvin).

*Field Name*: Orange-banded Riodinid.

*Species Range*: Central America to Bolivia and south Brazil.

*Field Characters*: Small brown butterfly with a central, elongate orange band in all four wings.

*Record*: Only a single individual taken. 1948—May 24 (48516).

**Hades noctula** Westw. & Hew.

*Field Name*: Red-based Black.

*Species Range*: Mexico to northern Brazil.

*Field Characters*: Base of wings red. Rest black with white radiations on distal half of all wings.

*Number*: Total, 376. Taken, 52.

*Notes*: A common migrant, easily identified because of its fearlessness and slow flight. This is exceedingly weak and fluttering, the wing tissue easily torn and the scales very loose. When swooped at and missed it sinks to the ground, helpless to dodge. Never makes headway against wind of any strength.

*Record*: 1948—April 27 (1, 48399; 28

seen), 28 (1), 29 (1), 30 (6 seen); May 6 (1), 21 (4), 23 (3), 24 (3), 25 (6 taken, 61 seen), 26 (3 taken, 37 seen singly), 28 (1), 29 (2), 31 (5 taken, 38 seen); June 5 (34 seen), 6 (6), 7 (1), 17 (3 taken, 18 seen), 18 (1), 22 (1 taken, 12 seen), 23 (1), 27 (1), 30 (2 taken, 19 seen); July 3 (1 taken, 39 seen), 4 (2 taken, 11 seen), 6 (1 taken, 14 seen), 8 (1), 15 (1 taken, 31 seen), 16 (5 seen).

**Mesosemia near magete** Hew.

*Field Name:* White-barred Freckled Riodinid.

*Species Range:* Guianas.

*Field Characters:* Small, pale brown lined and freckled with darker; a broad, oblique, white forewing band; two central forewing ocelli with three white pupil dots. Closely resembles a satyrid.

*Number:* Total seen and taken, 2.

*Record:* 1945—May 1 (1). 1948—May 29 (1, 48667).

**Lymnas iarbhas iarbhas** (Fabr.).

*Field Name:* Gold-banded, Scarlet-dotted Black.

*Species Range:* Central America to Brazil.

*Subspecies Range:* Colombia, Ecuador, Venezuela and Trinidad.

*Number:* Total, 21. Taken, 8.

*Record:* 1948—June 6 (1, 48927; 8 seen); July 16 (4 taken, 5 seen), 20 (1), 21 (2).

**Diorina dysonii**, form *dysonii* Sndrs.

*Field Name:* Tailed Violet Riodinid.

*Species Range:* Northern South America.

*Field Characters:* A beautiful small riodinid, with long tails, a scarlet band at their base, two white bands across all wings.

*Number:* Total, 57. Taken, 2. Two singles and a dense flock of 55.

*Record:* 1945—June 2 (1). 1948—July 21 (1, 481269; 55 seen flying through pass).

**Mesene margaretha** (White).

*Field Name:* Striped-tip Orange.

*Species Range:* Central America to Colombia and Venezuela.

*Field Characters:* Small, orange, black-edged, the forewing black crossed by four white lines. Closely resembles certain geometrids and pyralids.

*Number:* Total, 6. Taken, 6.

*Record:* 1948—May 9 (1), 26 (2), 29 (1). June 6 (2, 481515).

**Mesene silaris** Godman & Salvin.

*Field Name:* Black-framed Pale Yellow Riodinid.

*Species Range:* Central America and northern South America.

*Field Characters:* Very small, broad brown frame around central pale yellow.

*Record:* A single specimen taken. 1948—May 25 (1, 48589).

**Baeotis choronlensis** Lichy.

*Field Name:* Small, Pale-barred Black.

*Species Range:* Venezuela.

*Record:* A single specimen taken. 1948—May 15 (1, 48524).

**Argyrogramma holosticta** (Godman & Salvin).

*Field Name:* Black-peppered Yellow Riodinid.

*Species Range:* Mexico to Peru and Trinidad.

*Field Characters:* Very small, pale yellow, thickly dotted with brown.

*Number:* Total, 25. Taken, 7.

*Record:* 1948—May 24 (1, 48585), 21 (1), 26 (2); June 6 (2 taken, 18 seen).

**Sarota acantus** (Cramer).

*Field Name:* Small Freckled-brown.

*Species Range:* Bolivia to the Guianas.

*Field Characters:* Very small, brown, indistinctly freckled with darker dots. Closely resembles a hesperid.

*Number:* Taken, 2.

*Record:* 1948—May 24 (1, 48586); August 2 (1).

**Imelda kadenii** (Felder).

*Field Name:* Black-bordered White Riodinid.

*Species Range:* Venezuela.

*Field Characters:* Complete black frame enclosing white. An orange and a white spot near tip of forewings. Closely resembles a nymphalid.

*Number:* Total, 65. Taken, 4.

*Record:* 1948—May 29 (1, 48668); June 30 (1 taken, 61 seen); July 2 (1, 491024), July 15 (1).

**Theope eudocla acosma** Stichel.

*Field Name:* Black-tipped Orange.

*Species Range:* Central America to Colombia and Guianas.

*Subspecies Range:* Colombia and Venezuela.

*Field Characters:* Small, a broad black tip to the forewings; the rest of the wings pale orange.

*Record:* Only a single individual taken. 1948—July 15 (1).

MIGRATION OF LYCAENIDAE.

Twenty species of Little Blues (*Lycaenidae*) were among the migrants through Portachuelo Pass. This is one of the most puzzling families of *Lepidoptera* even in a mounted collection, and infinitely more so on the wing or freshly caught in the field. Any attempt at reasonably clear Field Names or Field Characters is useless.

Two out of the 20 species (*Thecla azia* and *Leptotes cassius*) were migrating in tens of thousands, but most of these butterflies appeared singly or in small groups. Two specimens only were taken of seven species, and a single individual in the case of ten other species. If we could have redoubled our efforts we could doubtless have taken many more species. An interesting

association in small numbers is shown by 13 individuals taken on one day, June 6, 1948, which proved to represent ten species.

***Thecla aepa* Hew.**

*Species Range:* Panama to Bolivia.  
*Record:* 1948—May 25 (1); June 6 (1).

***Thecla albata* Felder.**

*Species Range:* Panama, Colombia, Venezuela and Trinidad.  
*Record:* 1948—July 21 (1).

***Thecla amplia* Hew.**

*Species Range:* Guatemala to the Guianas.  
*Record:* 1948—June 6 (1).

***Thecla azia* Hew.**

*Field Name:* Dwarf Brown Lycaenid.  
*Species Range:* Mexico to Brazil.  
*Number:* Taken, 13. The following notes on abundance were made on several days of migrational peaks. May 26, 1948: Heavy flight of these small, brown lycaenids, ten to fifty every minute, increasing until 3 P.M. Jerky flight up and down, difficult insects to catch. June 24: Many hundreds. July 15: Many flocking with skippers. July 16: Thousands, from 8.30 A.M. to noon. July 21: Height of abundance, 1000's upon 1000's, steadily all day. Curious bobbing flight, flicking up and down. Two other larger species with them.

*Record:* 1948—May 26 (1); June 16 (1); July 8 (1), 13 (1), 15 (4), 16 (2), 20 (1), 21 (2).

***Thecla cecrops beon* (Cramer).**

*Species Range:* Indiana to Brazil.  
*Record:* 1948—July 15 (2), 16 (1), 21 (1).

***Thecla celmus* (Cramer).**

*Species Range:* Mexico to south Brazil.  
*Record:* 1948—June 6 (1, 48817).

***Thecla cyphara* Hew.**

*Species Range:* Mexico to Venezuela.  
*Record:* 1948—July 13 (1).

***Thecla demonassa* Hew.**

*Species Range:* Mexico to Amazons.  
*Record:* 1948—July 13 (1), 16 (1).

***Thecla glzela* Hew.**

*Species Range:* Bolivia.  
*Record:* 1948—June 6 (1), July 16 (1).

***Thecla janthina janthina* Hew.**

*Species Range:* Guatemala to Brazil.  
*Record:* 1948—July 26 (1).

***Thecla mulucha* Hew.**

*Species Range:* Guatemala to Ecuador, Trinidad and Amazonia.  
*Record:* 1948—July 11 (1, 481153).

***Thecla nubes* Druce.**

*Species Range:* Panama, Venezuela and Trinidad.

*Record:* 1948—June 6 (1).

***Thecla perisus* Druce.**

*Species Range:* Venezuela and Colombia.  
*Record:* 1946—May 1 (1).

..... ***Thecla politus* Druce.**

*Species Range:* Guatemala to Trinidad and Amazonia.

*Record:* 1948—June 6 (1).

***Thecla temesa* Hew.**

*Species Range:* Panama to Peru, Trinidad, Guianas and Amazonia.

*Number:* Taken, 2. Twice seen in large flocks. June 18, 1948, 100's seen. July 20, at least 500 seen flying with skippers.

*Record:* 1948—June 18 (1); July 20 (1).

***Thecla thela* Hew.**

*Field Name:* Dwarf Morpho-like Lycaenid.  
*Species Range:* Mexico, Ecuador and Bolivia.

*Number:* Taken, 2. On two occasions these insects were seen in large numbers. July 15, 1948: 56 seen. July 20: 600 to 700, gleaming in the sun like diminutive morphos. Much slower flight than other lycaenids.

*Record:* 1948—July 20 (2, 481257, 481258).

***Thecla una* Hew.**

*Species Range:* Panama, Venezuela, British Guiana and Brazil.

*Record:* 1948—July 21 (1), 24 (1).

***Thecla undulata* Hew.**

*Species Range:* Colombia, Ecuador and Brazil.

*Record:* 1948—June 6 (2).

***Leptotes cassius cassius* (Cramer).**

*Field Name:* Dwarf Spotted Lycaenid.  
*Species Range:* Mexico to south Brazil and West Indies.

*Subspecies Range:* Mexico to south Brazil.  
*Number:* Taken, 25. Several days of migrational peaks were noted as follows: May 26, 1948: Counted 500 flying south through the Pass and watched hundreds more. The flight was swift and erratic. June 17: Clouds of many thousands passed for three hours. Many pairs circling about one another. At least 5,000 were seen. June 18: Still passing in large numbers. July 3: Three or four hundred flocking with small hesperids.

*Record:* 1948—April 27 (1, 48407); May 1 (1, 48437), 18 (1), 21 (4), 23 (1), 25 (1), 26 (2), 29 (1); June 6 (1), 17 (2, 48818), 18 (1), 24 (1); July 2 (1), 3 (1), 13 (1), 15 (2), 21 (3).

***Hemiargus hanno hanno* (Stoll).**

*Species Range:* Mexico to Guiana and West Indies.

*Subspecies Range:* Mexico to Guiana.  
*Record:* 1948—July 16 (1).

## MIGRATION OF HESPERIIDAE.

Of the large family of Skippers (Hesperiidae), 41 species were recorded as migrants through Portachuelo Pass. These insects have in common a swift, darting flight and the majority have brown as a dominant color, so that in the case of most species identification on the wing is impossible. A commentary on the numerous species, the rarity of many, and the difficulty of catching these insects on their swift flight is shown by the fact that of 26 species (two-thirds of the whole), only single individuals were taken, and of six other forms the total taken was two each. On the other hand, several species were counted in thousands and of one, a hundred thousand was estimated.

*Achylodes pallida* (Felder).

*Field Name*: Large Bronze-brown Skipper.

*Species Range*: Mexico and northern South America.

*Field Characters*: Large (45 mm.), bronze-brown with wavy, water-mark-like indistinct markings of darker.

*Number*: Taken, 2.

*Record*: 1948—April 28 (1, 48423), 29 (1, 481458).

*Achylodes thraso* (Hübner).

*Field Name*: Purplish-black Pointed-wing Skipper.

*Species Range*: Texas to southern Brazil.

*Field Characters*: Medium, purplish-black, with a few, indistinct lighter spots; forewing pointed.

*Record*: A single specimen taken. 1948—July 29 (1, 481514).

*Aguna coelus* (Cramer).

*Field Name*: Green-based Short-tail Skipper.

*Species Range*: Mexico to southern Brazil.

*Field Characters*: Medium, brown, short-tailed, windowed skipper, green sheen on wing bases; white band across under hindwing.

*Record*: One specimen taken. 1948—July 16 (1, 481490).

*Aguna* species?

One unidentifiable specimen. Species unknown; white band on underside of wings distinct from other species.

*Record*: 1948—July 21 (1, 481513).

*Amenis pionia* (Hew.).

*Field Name*: Scarlet-dotted White-edge Skipper.

*Species Range*: Colombia, Venezuela to Argentina.

*Field Characters*: Basally green, distally brown, all wings with narrow white edge. Two scarlet spots on forewing, two on base of abdomen.

*Record*: Single specimen taken. 1948—June 5 (1, 481454).

*Anisochoria albiplaga* (Felder).

*Field Name*: White-spotted-hindwing Skipper.

*Species Range*: Colombia and Venezuela to Peru and Argentina.

*Field Characters*: In general brown, with large, white, round, central patch on hindwing.

*Record*: Single specimen taken. 1948—July 17 (1, 481479).

*Astraptes fulgerator* (Walch).

*Field Name*: Giant White-barred Green-base Skipper.

*Species Range*: Texas to southern Brazil.

*Field Characters*: Very large (60 mm.), brown, with two unequal transparent bars on forewing. Head, body and base of all wings iridescent green.

*Record*: Single specimen taken. 1948—July 25 (1, 481371).

*Augiades crinitus* (Cramer).

*Field Name*: Golden Skipper.

*Species Range*: Costa Rica to Peru and Amazonia.

*Field Characters*: Medium (40 mm.). Wings basally golden-orange, dark brown distally, with five irregular groups of transparent spots on forewing. Easily identified on wing because of gold color in spite of rapid, zigzag flight.

*Number*: This species appeared on migration, in 1948, throughout a period of 22 days, from June 28 to July 19. On the first few days the average was one a day; on following days there were hundreds, reaching a peak of an estimated 35,000 in two and a half hours on July 6, and dropping on the 16th, when only 1,430 were counted in three hours. Three days later the last individual was taken, resting on the roof of Rancho Grande.

Twenty-five were taken, 45,000 counted; 100,000 would be a very conservative estimate for those passing, uncounted.

*Record*: 1948—June 28 (1, 48976), 30 (1, 48998; 300 plus counted); July 2 (6 taken; 100's darting past in company with two other species, mostly *Panoquina sylvicola* and day-flying moths), 3 (again the dominant migrant; 2, 481028; 700 counted in half an hour, a great many missed in count), 4 (1, 481056; 800 counted in fifteen minutes; 1000's passing), 6 (9, 481075; peak of migration: 35,000 between 8 and 10.30 A.M. They then increased, 10 a second. Flew at 10 to 20 feet height); 13 (6,000 estimated); 16 (1 taken, 1,430 counted, 100's missed), 19 (1, 481252, on roof of Rancho Grande).

*Autochton zarex* (Hübner).

*Field Name*: Bar-window White-edged-hindwing.

*Species Range*: Mexico to southern Brazil.

*Field Characters*: Small, brown, spindle-shaped-window. White edge on hindwing.

*Record*: Single specimen taken. 1948—July 5 (1, 481072).

**Callimormus gracilis** (Felder).

*Field Name*: Small Bronze-brown.

*Species Range*: Mexico to Peru and Amazons.

*Field Characters*: Very small (22 mm.), bronzy-brown.

*Number*: Taken, 3.

*Record*: 1948—May 1 (1, 481486); July 10 (1), 24 (1, 481488).

**Carystus coryna** (Hew.).

*Field Name*: Buff-barred Silver-underwing Skipper.

*Species Range*: Mexico to Peru and Amazons.

*Field Characters*: Small, six-dotted window; under hindwing buff-barred silvery.

*Record*: Single specimen taken. 1948—July 22 (1, 481323).

**Celaenorrhinus eliglus** (Cramer).

*Field Name*: Twenty-dotted Window.

*Species Range*: Mexico to Argentina.

*Field Characters*: Medium (43 mm.), brown, two unequal window bands and scattered dots on forewing.

*Number*: Taken, 2.

*Record*: 1948—May 6 (1, 48502), 9 (1, 481483).

**Cogia calchas** (Herrich-Schaeffer).

*Field Name*: Black-dot-edged Brown Skipper.

*Species Range*: Texas to Paraguay.

*Field Characters*: Small, bronze-brown, dark dots along edge of wings.

*Record*: Single specimen taken. 1948—July 15 (1, 481480).

**Diphoridas phalaenoides** (Hübner),  
form *godmani* Mat. & Bou.

*Field Name*: Small Marbled Brown Skipper.

*Species Range*: Neotropics.

*Field Characters*: Small, light and dark marbled.

*Record*: Single specimen taken. 1948—July 21 (1, 481477).

**Ebrietas anacreon** (Staud.).

*Field Name*: Small Freckled Brown Skipper.

*Species Range*: Mexico to southern Brazil.

*Field Characters*: Small, bronzy-brown, freckled with darker.

*Record*: Single specimen taken. 1948—July 15 (1, 481476).

**Entheus priassus** (Linn.).

*Field Name*: Red-banded White-spot Skipper.

*Species Range*: Panama to Peru, and east through Venezuela, Guianas and Brazil.

*Field Characters*: Medium, red longitudinal bar, and three broken window bars on forewings; hindwing with very large, central white spot.

*Record*: Single specimen taken. 1948—July 19 (1♀, 481512).

**Eutocus lucia** (Capron.).

*Field Name*: Small Freckled Bronze Skipper.

*Species Range*: Panama to Bolivia and southern Brazil.

*Field Characters*: Small (24 mm.), bronze-brown, indistinctly freckled.

*Number*: Taken, 2.

*Record*: 1948—April 27 (2, 48414, 48415).

**Gorgythion begga begga** (Pritt.).

*Field Name*: Coarse-freckled Bronze Skipper.

*Species Range*: Mexico to southern Brazil.

*Subspecies Range*: Mexico to Venezuela.

*Field Characters*: Small, light-bronze, coarsely dotted with black.

*Record*: Single specimen taken. 1948—April 26 (1, 48391).

**Grals stigmaticus** (Mab.).

*Field Name*: Medium Bronze-brown.

*Species Range*: Texas to southern Brazil.

*Field Characters*: Medium (44 mm.), general color bronze-brown. Below, pale golden buff spots are indistinctly visible.

*Record*: Single specimen taken. 1948—July 3 (1, 481028).

**Heliopetes alana** (Reak.).

*Field Name*: Black-tipped White Skipper.

*Species Range*: Neotropics.

*Field Characters*: Medium, white with broad black forewing tips, and narrow hind edge. Below with golden tinge to a band in the tips, and a black, central hindwing spot.

*Record*: Single specimen taken. 1948—July 17 (1, 491474).

**Heliopetes arsalte** (Linn.).

*Field Name*: Streak-tipped White Skipper.

*Species Range*: Mexico to Argentina.

*Field Characters*: Small (32 mm.). White, streak-tipped forewings; all with narrow dark border. In swift or high flight may be confused with *Heliopetes laviana*.

*Number*: Total, 950 plus. Taken, 10.

Abundant, especially in late April and early May.

*Record*: 1948—April 26, 27, 28 and 29 white skippers were common, about 200 or more a day, until a thirty-mile wind drove them to shelter, when I took three and found them to be this species. April 29 (3, 481463; 300 counted going over); May 6 (1, 48503; several hundred flying high); 9 (1 taken, 2 seen); June 11 (1); July 2 (2), 17 (1, 481485).

**Heliopetes laviana** (Hew.).

*Field Name*: Buff-edged White Skipper.

*Species Range*: Venezuela, Ecuador and Peru.

*Field Characters*: Medium, white, with wide, pale buffy edge, with indistinct darker markings along inner margin of the buff.

*Record*: Single specimen taken. 1948—May 21 (1, 48542).

**Lerodea** species?

A single, specifically unidentifiable female. The dark spotted underside of the wings is distinctive.

**Milanlon hemes albidior** (Cramer).

*Field Name*: White-hind-winged Skipper.

*Species Range*: Throughout South America.

*Subspecies Range*: Venezuela.

*Field Characters*: Small (31 mm.). Transparent spotted dark forewing; black-bordered solid white hindwing. White hind wing makes identification easy.

*Number*: Total, 83. Taken, 4.

*Record*: 1948—April 26 (1, 48391; flashing hind wings on leaf); May 6 (2, 48501, 48503), 23 (30 seen), 24 (43 seen); June 6 (1 taken, 2 seen).

**Mnaslitheus simplilissima** (Herrich-Schaeffer).

*Field Name*: Small Brown Skipper.

*Species Range*: Mexico to Argentina.

*Field Characters*: Small (22 mm.), brown skipper.

*Record*: Single specimen taken. 1948—July 14 (1, 481117).

**Mylon lassia** (Hew.).

*Field Name*: Mottled Cream Skipper.

*Species Range*: Mexico to Bolivia.

*Field Characters*: Forewing mottled with various browns, hindwing pale, dotted with darker. Below, pale cream.

*Record*: Single specimen taken. 1948—May 1 (1, 481462).

**Mylon ozema** (Butler).

*Field Name*: Brown-freckled Pearly-white Skipper.

*Species Range*: Mexico to Peru, and Colombia to Trinidad.

*Field Characters*: Medium (38 mm.). Pearl white, iridescent in sun. Faintly brown, tipped and sparsely brown-edged. Dusky wing base.

*Number*: Total, 475 plus. Taken, 15.

*Record*: 1948—June 6 (3), 17 (2, 48822), 22 (1, 48881. Abundant this day. 58 counted in few minutes, and 100's of others passing in erratic flight. Resemble lycaenids, but much faster flight). July 8 (2, 48881a and 488881b), 15 (5), 21 (1).

**Panoquina sylvicola** (Herrich-Schaeffer).

*Field Name*: Ten-windowed Skipper.

*Species Range*: Mexico to southern Brazil.

*Field Characters*: Small, brown, five windows in each forewing, two bars and three dots.

*Number*: Thousands seen. Taken, 11.

*Record*: 1948—June 26 (1, 48923); July 2 (5, 481025, 481056), 13 (1), 16 (2), 21 (1), 23 (1), 29 (1).

**Phanus marshalli** (Kirby).

*Field Name*: Skeleton-winger Skipper.

*Species Range*: Mexico to Peru and the Amazons.

*Field Characters*: Medium (45 mm.), brown, with an intricate pattern of transparent bands, slits and spots. Transparent and opaque areas are about equal.

*Record*: Single specimen taken. 1948—July 14 (1, 481170).

**Pholisora cupreiceps** (Mab.).

*Field Name*: Small Freckled Bronze.

*Species Range*: Mexico to Bolivia and Brazil.

*Field Characters*: Small dark brown, obscurely freckled with darker.

*Record*: Single specimen taken. 1948—May 1 (1, 481525).

**Pholisora hazelae** Haywood.

*Field Name*: Small Dark-brown Skipper.

*Species Range*: Colombia, Venezuela and Ecuador.

*Field Characters*: Small (28 mm.), brown, hind wings darker.

*Number*: Taken, 2.

*Record*: 1946—July 5 (1). 1948—April 27 (1, 48415).

**Pholisora sinepunctis** (Kaye).

*Field Name*: Small Dark Bronze-brown.

*Species Range*: Venezuela and Trinidad.

*Field Characters*: Small brown skippers; characterless on the wing.

*Number*: Taken, 3.

*Record*: 1948—May 1 (1, 481481), 5 (1, 481482); July 15 (1).

**Proteides exadeus exadeus** (Cramer).

*Field Name*: Giant Golden-buff Skipper.

*Species Range*: Neotropics.

*Subspecies Range*: Northern South America.

*Field Characters*: Large (60 mm.), brown with basal half of wings golden-buff; large window spots, short, rounded tails.

*Number*: Taken, 2.

*Record*: 1948—May 1 (1, 481449); July 15 (1, 481491).

**Proteldes mercurius** (Fabr.).

*Field Name*: Narrow-winged Golden Skipper.

*Species Range*: Neotropics.

*Field Characters*: Narrow, long forewings, basal half of all golden.

*Record*: Single specimen taken. 1948—July 16 (1, 481475).

**Pyrgus orcus** (Cramer).

*Field Name*: Small White-spotted Brown Skipper.

*Species Range*: Salvador south throughout South America.

*Field Characters*: Small, grayish-brown, everywhere conspicuously dotted and spotted with white.

*Number*: Taken, 7.

*Record*: 1948—April 24 (2 taken, male and female), 30 (1, 481461); May 25 (1, 481487); July 15 (2), 19 (1, 481253).

***Pyrrhopyge phidias* (Linn.).**

*Field Name:* Shining-green White-edge Skipper.

*Species Range:* Colombia and Venezuela to Argentina.

*Field Characters:* Large (50 mm.), dark shining green, wings with very narrow white edge. Head and abdomen end chestnut.

*Record:* Single specimen taken. 1948—May 6 (1, 48506).

***Remella remus* (Fabr.).**

*Field Name:* Small Bronze-brown.

*Species Range:* Neotropics.

*Field Characters:* Small brown skipper, wholly characterless on wing.

*Record:* Single specimen taken. 1948—July 20 (1, 481336).

***Rhinthon anthracinus* (Mab.).**

*Field Name:* Medium Dark-brown Skipper.

*Species Range:* Colombia and Trinidad to Bolivia.

*Field Characters:* Medium (36 mm.), brown. Characterless on wing.

*Record:* Single specimen taken. 1948—June 15 (1, 481478).

***Urbanus dorantes* (Stoll).**

*Field Name:* Long-tailed Bronze Skipper.

*Species Range:* Neotropics.

*Field Characters:* Medium (38 mm.), light bronze-brown, long tails, seven square window spots in each wing.

*Number:* Thousands seen. Taken, 7. Migrating with *Augiades crinitus* but in fewer numbers.

*Record:* Whenever taken, many hundreds passed uncounted. 1948—April 28 (1, 48422), 29 (2, 481460); May 1 (1); June 24 (1, 48898); July 14 (1).

***Urbanus eurycles* (Latr.).**

*Field Name:* Long-tailed Brown Skipper.

*Species Range:* Texas to Paraguay.

*Field Characters:* Medium brown, elongated hind wings and tails, two narrow window slits on forewing.

*Record:* Single specimen taken. 1948—July 24 (1, 481493).

***Urbanus proteus* (Linn.).**

*Field Name:* Long-tailed Shining-green Skipper.

*Species Range:* New York to southern Brazil.

*Field Characters:* Brown, very elongate hind wings and tails, center of hind wing shining green. Large square windows.

*Number:* Taken, 2.

*Record:* 1948—May 9 (1); July 17 (1, 481492).

## EXPLANATION OF THE PLATE.

## PLATE I.

Fifty-five species of butterflies of the family Nymphalidae taken as migrants at Portachuelo Pass, Rancho Grande, north-central Venezuela.

- Fig. 1. *Euptoieta hegesia hegesia*.  
 Fig. 2. *Phyciodes carme carme*.  
 Fig. 3. *Phyciodes clio estabana*.  
 Fig. 4. *Phyciodes drusilla drusilla*.  
 Fig. 5. *Phyciodes leucodesma*.  
 Fig. 6. *Phyciodes liriopie anieta*.  
 Fig. 7. *Chlosyne janais hyperia*.  
 Fig. 8. *Chlosyne lacinia saundersii*.  
 Fig. 9. *Chlosyne narva*.  
 Fig. 10. *Vanessa virginiensis braziliensis*.  
 Fig. 11. *Junonia evarete zonalis*.  
 Fig. 12. *Hypanartia dione*.  
 Fig. 13. *Hypanartia lethe*.  
 Fig. 14. *Anartia amathea amathea*.  
 Fig. 15. *Anartia jatrophae jatrophae*.  
 Fig. 16. *Eunica caralis indigophana*.  
 Fig. 17. *Eunica monima*.  
 Fig. 18. *Eunica near viola*.  
 Fig. 19. *Dynamine theseus*.  
 Fig. 20. *Dynamine mylitta* (male).  
 Fig. 21. *Dynamine mylitta* (female).  
 Fig. 22. *Dynamine getae* (male).  
 Fig. 23. *Dynamine getae* (female).  
 Fig. 24. *Dynamine glauce* (male).  
 Fig. 25. *Dynamine glauce* (female).  
 Fig. 26. *Callicore machalii*.  
 Fig. 27. *Callicore metiscus*.  
 Fig. 28. *Perisama humboldtii humboldtii*.  
 Fig. 29. *Perisama xenocles*.  
 Fig. 30. *Catagramma pitheas*.  
 Fig. 31. *Hamadryas amphinome amphinome*.  
 Fig. 32. *Hamadryas februa februa*.  
 Fig. 33. *Hamadryas fornax fornax*.  
 Fig. 34. *Didonis biblis biblis*.  
 Fig. 35. *Cystineura bogotana*.  
 Fig. 36. *Pseudonica flavilla sylvestris*.  
 Fig. 37. *Pyrrhogyra edocla edocla*.  
 Fig. 38. *Pyrrhogyra neaerea juani*.  
 Fig. 39. *Marpesia chiron chiron*.  
 Fig. 40. *Marpesia coresia*.  
 Fig. 41. *Marpesia marcella* (male).

- Fig. 42. *Marpesia marcella* (female).  
 Fig. 43. *Marpesia peleus*.  
 Fig. 44. *Victorina apaphus*.  
 Fig. 45. *Victorina stelenes stelenes*.  
 Fig. 46. *Adelpha boeotia boeotia*.  
 Fig. 47. *Adelpha celerio celerio*.  
 Fig. 48. *Adelpha irmina irmina*.  
 Fig. 49. *Adelpha lara lara*.  
 Fig. 50. *Adelpha olynthia inachis*.  
 Fig. 51. *Chlorippe cyane cyane*.  
 Fig. 52. *Historia acheronta acheronta*.  
 Fig. 53. *Smyrna blomfieldia blomfieldia*.  
 Fig. 54. *Prepona antimache andicola*.  
 Fig. 55. *Prepona chromus chiliarches*.  
 Fig. 56. *Prepona demophon centralis*.  
 Fig. 57. *Anaea pseudiphis*.  
 Fig. 58. *Anaea xenocles*.  
 Fig. 59. *Protogonius hippona trinitatis*.

## PLATE II.

## Riodinidae.

- Fig. 1. *Euselasia russata*.  
 Fig. 2. *Hades noctula*.  
 Fig. 3. *Mesosemia*, near *magete*.  
 Fig. 4. *Lymnas iarbass iarbass*.  
 Fig. 5. *Diorina dysonii*, form *dysonii*.  
 Fig. 6. *Mesene margareta*.  
 Fig. 7. *Mesene silaris*.  
 Fig. 8. *Baeotis chironiensis*.  
 Fig. 9. *Argyrogramma holosticta*.  
 Fig. 10. *Sarota acantus*.  
 Fig. 11. *Imelda kadenii*.  
 Fig. 12. *Theope eudocia acosma*.

## Brassolidae.

- Fig. 13. *Caligo eurilochus caesia*.  
 Fig. 14. *Caligo atreus ajax*.  
 Fig. 15. *Caligo teucer teucer*.  
 Fig. 16. *Opsiphanes cassina merianae*.

## Morphidae.

- Fig. 17. *Morpho peleides corydon*.

## Libytheidae.

- Fig. 18. *Libytheana carinenta carinenta*.